

**Future Tense: Arts Education Technology
J. Paul Getty Center for Education in the Arts
Los Angeles, California
January 24, 1991**

**Transcript of Talk by Vibeke Sorensen
Session: Producing Art with Computers**

I started out in college in 1971 as an architecture student. I was drawn to the field because it combined my interests in art and science. I wanted buildings to move, an extension of our experience of moving through them. Architecture is an abstract experience, and I imagined abstract paintings that would come off the canvas, fill the space around us, and in defying gravity, dance and respond to our movements. The idea of performing complex images in real time like a musician performs a musical instrument was not possible until the electronics revolution. Hence, my initial interest in electronic animation. I was interested in video for another reason. Electronic technology and telecommunications is an "invisible" environment, and I wanted to help bring about a more esthetic and directly human approach to it. Television and computers are powerful and pervasive media which directly affect our world view and our values. I sought a kind of control over this environment in order to understand, shape, and ultimately transcend it. I wanted to infuse alternative ideas into it so as to extend it and make it more responsible. Finally, I wanted to see technology democratized!

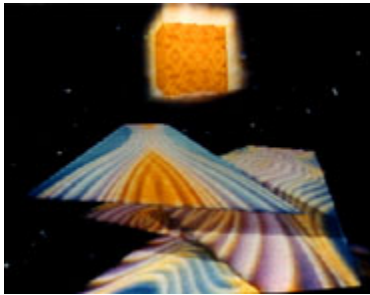
(1)* Getting back to performing images, here you see me performing a patch programmable video synthesizer in real time in 1980. It combined electronic music technology with video special effects.



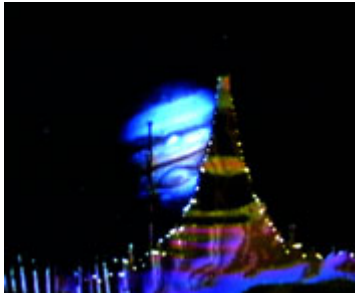
(2) A gallery installation at Virginia Polytechnic Institute in 1982 included a microphone interfaced with a video synthesizer. The voices of the people in the space altered images of themselves, which were displayed on the monitors hidden in the darkness looking at them.



(3) I collaborated in video post-production houses wherever and whenever I could work out an arrangement. Being non-commercial, experimental projects, it was often difficult. In this case, Dean Winkler was an engineer who became interested in my work, and I collaborated with him and Tom DeWitt on this piece and others. I composed the music.



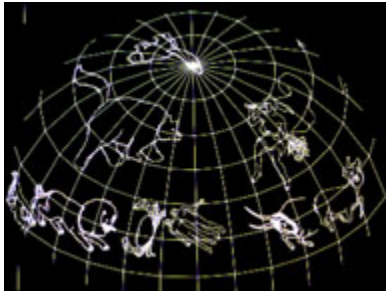
(4 - 5) In *Voyage*, I worked collaboratively, using footage of Jupiter from the Voyager spacecraft. We combined it with images from a spectrum analyzer and other electronic devices. Electronic technology extends our senses; we can see outwards and inwards, and this piece explores this capability.



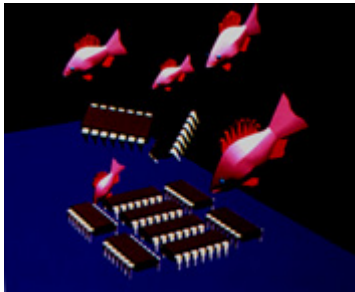
(6) I began working more deeply with digital devices in order to achieve more control over every picture element. Unfortunately, to do this in 1983 meant giving up real-time movement. In this piece, *Cool Fire*, I used a digital paint program at Caltech, and I attempted to create a sense of motion in what is a still image. It also implies a "MacLuhan-esque" interactive possibility inherent in the medium.



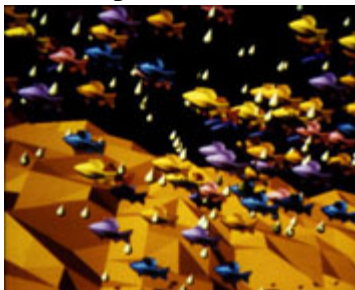
(7) In 1984, I worked on an experimental computer animated film, *The Magic Egg*, shown at planetaria around the world. I chose the constellations and the transformation of the anthropomorphic and anthropocentric view of the cosmos to our modern view. The sphere around the earth moves into a coincident placement on the planetarium dome whereupon the constellations dissolve out and the stars appear at infinity instead of on the dome.



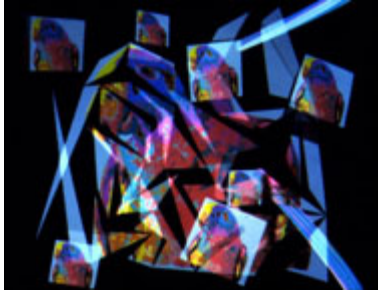
(8) The representation and transformation of knowledge and information through symbols and language became a more conscious element in my work. Specifically, the contemporary language of technology and with it, its potential for transforming our perception and experience. In *Fish and Chips*, the fish represent the creative impulse, art, and the subconscious. The chips, of course, represent technology.



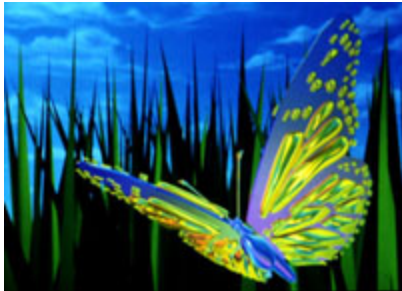
(9) This piece is called *Microfishe*, and it has lots of little fish in it.



(10) This is called [*Parrot Bits*](#)



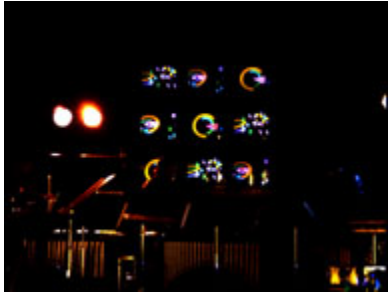
(11) The cliché, "it's not a bug, it's a feature" became [*It's Not a Bug, It's a Creature*](#)



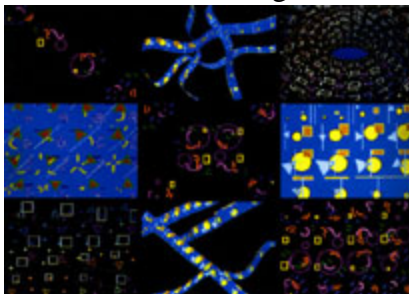
(12) In the [*Three Ring Circuit*](#), I designed and built a simple interactive sculpture which uses LED's or Light Emitting Devices, in a plexiglas box. The parts are laid out for esthetic rather than technical reasons, like a painting rather than an engineering design. I feel that electronics should be part of our creative media "toolkit" or "palette", much like any other medium. Of course, the computer is a malleable, dynamic medium taking many forms.



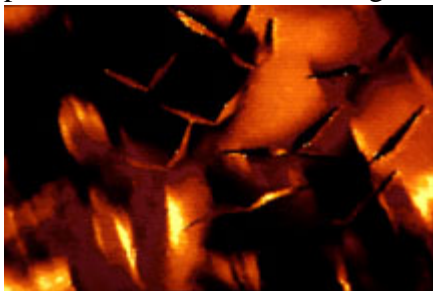
(13) Cycles refer to time, and I moved into music again. I worked on multiple monitor installations in 1987-88 using 3 tapes and 9 monitors in live musical performance. Each monitor is like a voice or a dancer, carefully choreographed and edited. Here, with the Percussions of Strasbourg in Nice, France.



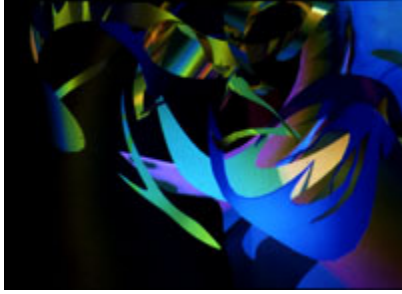
(14-20) In [*NLoops*](#), "N" refers to "Number" and "Loops" means "Loops of animation cycles." I applied polyrhythmic musical structures to animating visual form. Loops of animation cycles, painted by hand so as to infuse the human gesture, were finally put into motion through the use of computer processes. I worked with concepts of film history: the zoetrope, film, and finally computer animation. It is a 9 monitor piece. The light emitted from the monitors bathes the viewer in waves of light, like swimming in a pool of rhythmic color.



(21) In [*Concurrents*](#), I worked with the concept of parallel processing or "concurrent computation," represented by the 9 monitors, and based the animation on the conflict between nature and technology. I used many different techniques, including the use of a camera as a paintbrush, to infuse human gesture into it. Music is by Gaylord Mowrey.



(22-30) The stereoscopic [*Reflection Study Series*](#) explores perceptual paradox resulting from reflecting spaces in surfaces. I use 3-D computer models and ray tracing techniques to create mathematically correct but impossible spaces. I work with abstraction to focus my exploration of perception. These images have compelled me to more deeply question how we process visual information between our eyes and our minds. This is continuing work.



(31) At the San Diego Supercomputer Center (SDSC), I am currently working with scientists through a National Science Foundation Grant to help shape new "tools" and dynamic environments which will hopefully bring us a new way of interacting with complex computer models, worlds of our own creation, and shared worlds from afar. Finally, this brings me full circle to the 3-D moving painting mentioned at the start of my talk. The projection is wall sized and I can move the objects in a large scale environmental, stereoscopic space. The piece I am working on is called [Maya](#).



I feel that active involvement in the development of the technology is the only way to affect its change and the media according to our imaginations. The visions of artists push the advances, both culturally and technologically. Artists transform themselves, their media, and their environment. They are mirrors and catalysts, positive role models prototyping the future.

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